

### ABSTRACT

5

Method of determining the velocity  $V$  and anellipticity  $\eta$  parameters for processing seismic traces in a common midpoint (CMP) gather comprising: -a preliminary step to define a plurality of nodes  $(dtn, \tau_0)$ , for each node  $(dtn, \tau_0)$  defined in  
10 the preliminary step, the following steps: -for static NMO correction of traces in the CMP gather as a function of the values of the said parameters  $dtn$  and  $\tau_0$  at the node considered, and calculation of the semblance function associated with the said NMO correction for the node considered; and -for each  
15 picked time  $t_0$ , a step including determination of the maximum semblance node  $(dtn(t_0), \tau_0(t_0))$ , -and a final step to convert the  $dtn(t_0)$  and  $\tau_0(t_0)$  parameters, so as to obtain the velocity  $t_0$  and anellepticity  $\eta(t_0)$  laws.